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July 26, 2006

Ms. Stephanie Carr
RCRA Facility Manager
United States Environmental Protection Agency
New England Region
1 Congress Street, Suite 1100
Boston, MA 02114-2023



RE: *Former CEE Associates Limited Partnership Property*
80 Pickett District Road (the "Site")
New Milford, Connecticut



RDMS DocID

105176

Dear Ms. Carr:

In draft correspondence dated April 2006, the Environmental Protection Agency (EPA) indicated that it had reviewed correspondence prepared by Environmental Resources Management (ERM) dated December 19, 2005. In the draft correspondence, EPA presented general and specific comments regarding the status of the work as it relates to the RCRA Corrective Action program, and the 2004 Annual Report prepared by ERM to document the progress of remediation relative to the Connecticut Transfer Act (CTA). EPA also provided comments regarding its assessment of the work as it relates to the Migration of Contaminated Groundwater Under Control (CA 750).

ERM drafted this response to address EPA's comments and included a schedule outlining plans for completing the characterization and remediation of contamination associated with the Site. To simplify EPA's review, ERM responded to each item as presented in the draft April 2006 correspondence.

Section I - Comments on 2004 Annual Report

General Comments

1. No response needed.
2. **Overburden Groundwater Samples for Neeltran Property**

In 2004, ERM obtained access to monitoring wells on the Neeltran property. Well MW-17 was identified as the most critical well, and was

to be used in the remedial groundwater monitoring program, as well as in the compliance and post-compliance monitoring phases required under the RSRs.

During ERM's most recent visit to the Site (in April 2006), the location (and, indeed, the presence) of MW-17 could not be confirmed. A substantial amount of new construction has been performed on this property, and many of the previously reported monitoring wells appear to have been destroyed in this process.

ERM therefore proposes the following efforts to address groundwater issues on the Neeltran property.

Attempt to Locate the Existing Monitoring Well MW-17. ERM, after conferring with the owner of the Neeltran property, will utilize remote sensing techniques (magnetometer and/or ground penetrating radar) to attempt to locate the well protector. If located, the well will be accessed and inspected to assess its utility for future groundwater monitoring efforts. If found to be viable, the well will be included in the semi-annual remediation assessment groundwater monitoring program associated with the SVE/AS treatment system currently in operation on the former IntelliData site.

If MW-17 cannot be found, or if it is found but cannot be effectively used, ERM proposes to perform the following:

Limited Waterloo Profiling Effort, with Installation of a Replacement Monitoring Well.

In discussions with EPA personnel at the former IntelliData Site on June 26, 2006, it was decided to further define the lateral extent of the overburden plume through the use of a Waterloo Profiling effort on the southeastern portion of the Site. To that end, ERM proposes to perform a limited Waterloo profiling effort at six (6) locations along a north/south axis in the estimated vicinity of the VOC plume. This survey is anticipated to provide a lateral and vertical definition of the VOCs in groundwater in this area. From this information, ERM will

ERM will contact the owner of Neeltran to attempt to modify the existing access agreement, which presently allows only the collection of samples from MW-17. If these negotiations are successful, ERM will select the location for a "replacement" MW-17 along the "centerline" of the plume,

as defined by the Waterloo Profiling effort.

This well will be included in the semi-annual remediation assessment groundwater monitoring program associated with the SVE/ AS treatment system currently in operation on the former IntelliData site.

Samples are to be analyzed for VOCs via EPA Method 8260. If a new well is installed, boring logs (from the Waterloo Profiling effort and the well installation) along with the well construction diagram will be prepared and submitted with the appropriate Annual Report.

It is anticipated that this effort will provide EPA with the necessary information to meet the Environmental Indicators concerns. Sampling at this location will continue until compliance with the RSRs has been obtained (estimated to extend into 2010).

3. VOCs in Bedrock

ERM has previously contended that the presence of VOCs in bedrock monitoring wells on-site may not represent a "plume" within the bedrock, and that the "bedrock plume", if it exists, is extremely minor and its transport is constrained by the essentially impermeable nature of the competent bedrock. However, to better address EPA's concerns, ERM proposes to perform the following phased approach.

Phase 1 – Further Assess the Existing Bedrock Monitoring Well Network On-Site

Previous efforts in conjunction with the bedrock plume on-site have included a limited pump test, as well as preliminary geophysical logging of the existing bedrock wells. This information has indicated extremely limited (or non-existent) connection between the bedrock wells, with some connection with the overburden (possibly through weathered upper bedrock layers or imperfect seals on the casings). Actual flow through fractures was not indicated.

The purpose of this phase therefore is to define bedrock fracture characteristics, identify transmissive fractures, and set well screens in the three transmissive open bedrock boreholes at the Site. To do so, ERM proposes to conduct geophysical logging of BR-1, BR-3 and BR-5 using the acoustic televiewer (ATV), which will provide information on the depth and orientation of bedrock fractures.

Following completion of the borehole geophysical logging, ERM will develop a continuous transmissivity log along the length of each borehole using the FLUTe Profiler. Subsequent to completion of these activities, ERM will review the data and design monitoring wells for each of the three boreholes that will consist of one or two well screens. The intent of these wells is to isolate up to two transmissive fractures or fracture zones within each of the three bedrock boreholes for collection of groundwater elevation and quality data. The well screens will be set across discrete transmissive intervals within the competent bedrock, if identified.

If no transmissive fractures are identified within competent bedrock, then one well screen will be set at the bottom of the borehole and one within the upper weathered bedrock zone to evaluate the effect of the weathered rock zone on contaminant migration.

Following installation, the monitoring wells will be developed by purging up to five well volumes. The wells will then be allowed to equilibrate for a period of two weeks. Following equilibration, ERM will conduct a Site-wide groundwater elevation gauging round. Following completion of the gauging round, ERM will collect groundwater samples from the newly installed bedrock wells using low-flow sampling techniques. Groundwater samples will be analyzed for CVOCs using EPA Method 8021B (or equivalent).

Groundwater elevation and quality data will be evaluated to determine the degree to which fracture flow is controlling contaminant migration versus migration within the upper weathered bedrock zone.

If there is no (or negligible) fracture flow indicated, ERM will so state, and argue that further evaluation of the bedrock plume off-site be eliminated from consideration. Plume flow through the upper weathered bedrock (which is, essentially, a limited extension of the overburden) is anticipated to be addressed through the completion of the existing remedial program.

Phase 2 – Off-Site Efforts (If Necessary)

Should transmissive fractures be noted in the bedrock wells, ERM proposes a two-phased approach to addressing off-site concerns.

ERM has performed a preliminary geologic evaluation of the bedrock beneath the Site and the vicinity, and offers the following analysis.

Preliminary Bedrock Geologic Evaluation

Based on geologic logging conducted by ERM during advancement of overburden and bedrock boreholes, the Site is underlain by fine- to medium-grained sand and gravel deposits over weathered dolomite marble over competent dolomite marble. The weathered bedrock layer ranges from 0 feet thick in the northern portion of the Site, where bedrock outcrops exist, to approximately 10 feet thick in the central eastern portion of the Site. In many cases, this upper weathered bedrock zone represents a relatively high permeability zone. According to Walsh (2003), the Site is underlain by the Stockbridge Formation (Figure 1a), which is described as a "light-gray and white, chalky white weathering, massive to thickly bedded, weakly to moderately foliated, tremolite-dolomite marble."

Walsh (2003) conducted an extensive evaluation of bedrock structure within the New Milford quadrangle. A major north-south trending, westward dipping, ductile fault zone exhibiting a mylonitic fabric was mapped to the east of the Site (Figure 1a) and is referred to as Cameron's Line. In the vicinity of the Site, Cameron's Line is located along the east bank of the Housatonic River. Because of the ductile nature of this fault zone, it represents a low permeability zone that will act as a barrier to groundwater flow.

Brittle structures are typically more significant with respect to groundwater flow. Figure 1a presents a portion of Walsh's (2003) brittle structure map. The nearest mapped outcrop located west of Cameron's Line is located approximately 2,000 feet south of the Site. At this location, bedrock foliation strikes nearly north-south and dips 52° to the west. Two joints were measured to strike northeast-southwest and dip 48° and 54° to the southeast. A joint set was identified, which strikes east-southeast and dips 70° north-northeast.

Of these brittle features, Walsh (2003) identifies joint sets as representing "throughgoing" brittle features, which are longer features that typically intersect other joints or joint sets. These throughgoing joints strike east-southeast (i.e., primary azimuth of 282.8° or 103.8°) and dip to the north at high angles (i.e., typically greater than 60°). These interconnected joint sets control groundwater flow within fractured bedrock. However, of all

joints measures, only 6 percent represent “crossing” or interconnected joint sets, suggesting limited interconnectivity of bedrock fractures in the Stockbridge Formation.

This is significant from a groundwater flow perspective in that only a small percentage of fractures will transmit groundwater over significant distances. Five bedrock boreholes were advanced at the Site as part of the environmental investigation. Of these, one (BR-1) exhibits significant transmissivity (i.e., suggestive of intercepting an interconnected fracture set), two (BR-3 and BR-5) exhibit low transmissivities, and two (BR-2 and BR-4) exhibit effectively no transmissivity.

Figure 1b presents a portion of Walsh’s (2003) fracture trend analysis map of brittle structures. “The map is subdivided into 17 domains with north-south boundaries based on geologic contacts and east-west boundaries based on outcrop distribution.” Walsh (2003) The Site is located within domain 8. Brittle joints within this domain strike east-southeast (i.e., primary azimuth of 292° or 112°) and dip to the north at high angles. The primary foliation in this area is nearly north-south, which is orthogonal to the joint sets.

ERM conducted a lineament analysis to identify linear topographic features that typically represent surface expressions of large-scale bedrock structural features (Figure 1c). Regional-scale lineaments strike generally north-northwest, which is consistent with bedrock foliation planes presented above. A series of orthogonal lineaments strike generally east-northeast, which is consistent with bedrock joint sets. No lineaments were identified transecting the Site. North-south trending lineaments were identified to the east, west and south of the Site. An east-west and a northwest-southeast trending lineament were identified to the northeast of the Site.

Regionally, the Site is located on relatively flat ground that slopes gently downward to the east toward the Housatonic River, which is located approximately 800 feet east of the Site (Figure 1d). The Site is located within a sub-drainage basin within the Housatonic River basin. The Housatonic River flows from north to south. Based on regional topography, groundwater is anticipated to flow to the east-southeast and discharge to the Housatonic River. This presumption is supported by the fact that the Housatonic River is the lowest elevation surface water body in the vicinity of the Site. The surface water elevation of Lake Candlewood, located approximately 1.5 miles west of the Site, is

approximately 230 feet higher than that of the Housatonic River. Similar, though more dramatic topographic and surface water body elevation changes, exist immediately east of the Housatonic River.

This presumed east-southeast groundwater flow direction in bedrock is supported by groundwater elevation and contaminant distribution data collected from the Site (Figure 1e). Site groundwater elevation data indicate that groundwater in bedrock flows to the east-southeast. Chlorinated volatile organic compounds (CVOCs) are present in two of five bedrock boreholes at the Site. These two bedrock boreholes are located to the east-southeast of identified source areas beneath the building.

CVOCs are also present in a former water supply well located in the eastern portion of the Site. These impacts are attributed to either an upgradient, off-Site source or to effects of long-term historical pumping drawing contamination into this well.

Proposed Approach

The first phase is predicated on the definition of the ultimate receptor for fracture flow in the bedrock – the Housatonic River. A preliminary evaluation of the bedrock hydrogeology of the region by ERM geologists indicated that faults located along the Housatonic most likely act as a barrier to further flow to the east. Hence, bedrock groundwater (and plumes associated with it) are anticipated to discharge to the Housatonic River.

A number of joints were identified trending southeast within several miles of the Site, although no joints were found directly beneath or in the immediate vicinity of the Site. However, bedrock groundwater contours on the Site were also found to trend to the southeast.

If it can be argued that no discharge of VOCs from groundwater from the Site is reaching the Housatonic River, then ERM asserts that the limits of the bedrock plume have been defined, as they do not extend to the River. To assess this condition, ERM will attempt to arrange access agreements with property owners along the western bank of the Housatonic southeast of the Site.

Once access agreement is obtained, ERM proposes to conduct a dynamic investigation along the western bank of the Housatonic River using the

modified Waterloo Profiler. ERM proposes to advance up to 10 Profiler borings along a north-south transect and collect multiple discrete-interval groundwater samples from each boring for real-time analysis of CVOCs using a field laboratory.

The modified Waterloo Profiler is a direct push, continuous, point sample groundwater sampling tool that allows for the collection of discrete groundwater samples from a 5-centimeter vertical interval of the aquifer at virtually any vertical spacing. Groundwater samples will be collected from discrete intervals beginning at the water table and continuing at approximately five-foot intervals to the top of bedrock or drilling refusal.

Groundwater samples will be analyzed by a National Environmental Laboratory Accreditation Program (NELAP) certified mobile field laboratory. The field laboratory consists of a gas chromatograph and mass spectrometer (GC/MS). Replicate samples will be collected representing 10 percent of groundwater samples collected for analysis by a Connecticut-certified fixed laboratory for confirmatory quality control analyses.

The data generated as part of this task will allow for generation of a detailed two-dimensional dataset along the western bank of the Housatonic River to evaluate CVOC concentrations discharging upward from bedrock to overburden, as well as CVOC concentrations within the water column up to the water table. These data can be compared with Surface Water Protection Criteria (SWPC) to evaluate the potential for risk associated with discharge of groundwater to surface water.

If the results of the first phase of this off-site effort indicates the presence of VOCs leaving the bedrock from the Site at the Housatonic River, ERM will, after obtaining appropriate access agreements with down-gradient property owners, install a maximum of three (3) bedrock/overburden "well pairs" in off-site locations estimated to be down-gradient of the Site/release areas. ERM will perform the full range of geophysical studies (caliper, temperature, conductivity, acoustic televiewer, and FLUTE Profiler) of the open boreholes.

If no transmissive fractures are identified within competent bedrock, then one well screen will be set at the bottom of the borehole and one within the upper weathered bedrock zone to evaluate the effect of the weathered rock zone on contaminant migration.

Following installation, the monitoring wells will be developed by purging up to five well volumes. The wells will then be allowed to equilibrate for a period of two weeks. Following equilibration, ERM will conduct a Site-wide groundwater elevation gauging round. Following completion of the gauging round, ERM will collect groundwater samples from the newly installed bedrock wells using low-flow sampling techniques. Groundwater samples will be analyzed for CVOCs as defined in the Site QAPP.

These wells will be sampled on a semi-annual basis, with summary reports included in the Annual report.

4. Detection Limits and 1,4-Dioxane

ERM does not agree that the EPA Region 9 Preliminary Remediation Goal for 1,4-dioxane is appropriate for this setting.

The EPA Criteria (6.1 ug/L) is based on direct human consumption (in tap water). As ERM has demonstrated in documents prepared earlier for the Site (Limited Sensitive Receptor Survey), there are no direct consumers of groundwater downgradient from the former IntelliData Site. The area is classified by the CT DEP as "GB", which, among other things, means that the groundwater is not considered suitable for direct human consumption.

ERM's approach to the investigation and remediation of this Site has been governed by the requirements of the RSRs. In GB areas, groundwater remediation is required to meet Surface Water Protection Criteria and Volatilization Criteria. No such criteria have been adapted by the CT DEP for 1,4-dioxane. The CT DEP has developed a Groundwater Protection Criteria (GWPC) of 20 ug/L, but this is for use in groundwater areas classified as "GA" (direct consumption of groundwater without treatment assumed).

Therefore, in this setting, the RSRs have no defined or required remediation standard for 1,4-dioxane. ERM proposes to continue to monitor groundwater for 1,4-dioxane, but with a minimum detection limit of no less than 20 ug/L.

5. Stormwater Vault

No comment appears necessary.

Specific Comments

6. Section 2.2: VOCs in Soil Vapor Beneath AOC-5.

No comment appears necessary.

7. Section 2.3.1 Site Groundwater Sampling Program

ERM reiterates that the "remediation driver" for this Site is TCE. While other VOCs will be monitored and reported, the critical parameter to be assessed during the critical active remediation portion of the project will remain TCE. Significant changes in other parameters will, of course, be noted during in the Annual Reports.

8. Section 2.5 Revisions to Conceptual Site Model

No comment appears necessary.

9. Section 3.2 Anticipated Activities

ERM's response to this question is included in the response to Question 2, above.

10. Appendix B, Table 4

No comment appears necessary.

11. Appendix C

No comment appears necessary.

12. Appendix C, Figure 2

No comment appears necessary.

13. Appendix D, Neeltran Documentation

No comment appears necessary.

14. Appendix E, Pilot Study Work Plan

No comment appears necessary.

15-18. Errata

No comment appears necessary.

19. Human Exposures Under Control

The SVE system is currently active at the Site. This system has set up a significant negative pressure beneath the floor slab, and this precludes the entry of vapors from beneath the slab into the building. If necessary, ERM could modify the existing notification to the building owners to state that, should the SVE system be incapacitated, VOCs vapors could enter the structure.

20. Additional Bedrock Groundwater Investigation

Please note that issues raised in this question are addressed in the response to Question 2, above.

III Next Steps

Migration of Contaminated Groundwater Under Control Environmental Data Gaps

ERM has addressed these concerns in its responses to questions 2 and 3, above.

ERM's schedule for the Semi-annual sampling program for the former IntelliData facility envisions samples collected in April and September/October of each calendar year.

Quality Assurance Project Planning

A copy of the QAPP was forwarded to the EPA on May 12, 2006 (both electronic version and hard copy).

Schedule

The proposed schedule for the implementation of the efforts described in Responses 2 and 3 are, in general, subject to the execution of new and/or revised access agreements for off-site properties. It is hoped to commence the initial efforts associated with these activities (assessment of utility of MW-17, performance of on-site bedrock geophysics) within the next 60 days.

The next groundwater monitoring event is anticipated in the end of September/ beginning of October 2006.

Reporting to the EPA is anticipated with the generation of the next Annual Report (December 2006).

If you have any questions or need additional information, please feel free to call us at (860) 466-8519. Of course, we would like to discuss these issues further at the June 27 meeting at the Site.

Regards,



Robert J. Drake, PE, Ph.D., LEP.
Senior Project Manager



Kevin P. King, LEP
Principal

Attachments

cc: Joshua A. Creem, Esq., Corillian
Andrew N. Davis, Esq., LeBoeuf, Lamb, Greene & MacRae LLP

**US EPA New England
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Purpose of Target Sheet:

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Description of Oversized Material, if applicable:

Figure 1: Conceptual Site model for CVOC impacts

☒ **Map** ☐ **Photograph** ☐ **Other (Please Specify Below)**

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**US EPA New England
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Image Target Sheet**

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Purpose of Target Sheet:

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Description of Oversized Material, if applicable:

Figure 1a - 1e : Map units /Conceptual site model for CVOC impacts

☒ **Map** ☐ **Photograph** ☐ **Other (Please Specify Below)**

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